

CLAIMS

WHAT IS CLAIMED IS:

1. An image scanning apparatus comprising:
  - an illuminating device, which irradiates illumination;
  - 5 an image sensor, which outputs signal charges as image data of the original, including a light receiving part for receiving light, in which the light is an illumination irradiated from said illuminating device and influenced by an original, and includes a transferring unit for transferring signal charges generated at the light receiving part; and
  - a controlling device, which instructs said illuminating device to irradiate illumination,
- 10 and directs a timing to transfer signal charges to said transferring unit under a predetermined condition.
2. The image scanning apparatus according to claim 1, wherein:
  - 15 said illuminating device respectively irradiates upon the original as the illumination, light to be shut out other than at the light receiving part of said image sensor and light having a long wavelength not to be shut out other than at the light receiving part of the image sensor; and
  - said controlling device prohibits the light having a long wavelength from being irradiated by said illuminating device during the period in which the image data of the original is being output through the transferring unit of said image sensor.
- 20 3. The image scanning apparatus according to claim 2, wherein:
  - 25 said image sensor discharges signal charges not corresponding to the image data of the original as invalid data; and
  - said controlling device permits the light having a long wavelength to be irradiated by said illuminating device during the period in which the invalid data is being discharged by said image sensor.

4. The image scanning apparatus according to claim 2, wherein:

the light having a long wavelength irradiated upon the original by said illuminating device is light which is received with low photosensitivity by a normal image is on an original, and is shut out by a defect on the original; and

5 said controlling device detects a defect on the original based on image data of the original output from said image sensor, the image data obtained by said light having a long wavelength.

5. The image scanning apparatus according to claim 1, wherein:

10 said illuminating device respectively irradiates light upon the original as the illumination, to be shut out other than at the light receiving part of said image sensor and light having a long wavelength not to be shut out other than at the light receiving part of said image sensor; and

15 said controlling device permits the light having a long wavelength to be irradiated by said illuminating device, prior to irradiation of the light to be shut out other than at the light receiving part of said image sensor, the light having a long wavelength irradiated during the period in which data not corresponding to image data of the original is being output through the transferring unit of said image sensor.

20 6. The image scanning apparatus according to claim 5, wherein said controlling device prohibits the light having a long wavelength from being irradiated by said illuminating device during the period in which the image data of the original is being output through the transferring unit of said image sensor.

7. The image scanning apparatus according to claim 5, wherein:

25 the light having a long wavelength irradiated upon the original by said illuminating device is light which is received with low photosensitivity by a normal image is on an original, and is shut out by a defect on the original; and

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said controlling device detects a defect on the original based on image data of the original output from said image sensor, the image data obtained by said light having a long wavelength.

5 8. An image scanning apparatus comprising:

10 an illuminating device for irradiating illumination on an original; an imaging device for reading out signal charges from a light receiving part and outputting said signal charges as image data of the original, including said light receiving part for receiving light and for generating said signal charges, in which the light is an illumination irradiated from said illuminating device and influenced by the original; and

15 10 a controlling device for directing said illuminating device to irradiate illumination, directing said imaging device to read out the signal charge generated by said light receiving part, and prohibiting illumination from irradiating in said illuminating device while image data of the original is output from said imaging device.

20 15 9. The image scanning apparatus according to claim 8, wherein:

10 said imaging device

15 has a line sensor comprising a plurality of light receiving parts arranged in one dimension, a charge-to-voltage converter which converts signal charges to voltages and outputs the voltages, a charge readout part which reads out signal charges generated by said light receiving parts, and a charge transfer part which transfers signal charges read out by said charge readout part to said charge-to-voltage converter, and

20 25 outputs image data of the original for every line while moving at least one of said line sensor and original in a direction orthogonal to the direction said light receiving parts are arranged in; and

25 said controlling device directs said charge readout part to periodically read out one

line of the signal charges generated by said light receiving part and prohibits illumination from irradiating in said illuminating device while said signal charge is converted to a voltage by said charge-to-voltage converter and then output as image data of the original.

10. The image scanning apparatus according to claim 9, wherein:

5 said imaging device at least outputs signal charges generated by said charge-to-voltage converter as invalid data that does not correspond to image data of the original, while illumination is irradiating from said illuminating device.

11. A recording medium which stores an image scanning program which causes a computer to execute the step of:

10 controlling an image scanning apparatus having

an illuminating device for irradiating illumination on an original and

15 an imaging device for reading out signal charges from a light receiving part and outputting said signal charges as image data of the original, including said light receiving part for receiving light and for generating said signal charges, in which the light is an illumination irradiated from said illuminating device and influenced by the original; wherein said controlling step includes

20 a controlling procedure for directing said illuminating device to irradiate illumination,

directing said imaging device to read out the signal charge generated by said light receiving

part, and prohibiting illumination from irradiating in said illuminating device while image data

25 of the original is output from said imaging device.

12. The recording medium which stores an image scanning program according to claim

11, wherein:

20 said imaging device

25 has a line sensor comprising a plurality of light receiving parts arranged in

one dimension, a charge-to-voltage converter which converts signal charges to

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voltages and outputs the voltages, a charge readout part which reads out signal charges generated by said light receiving parts, and a charge transfer part which transfers signal charges read out by said charge readout part to said charge-to-voltage converter, and

5 outputs image data of the original for every line while moving at least one of said line sensor and original in a direction orthogonal to the direction said light receiving parts are arranged in; and

10 said controlling device directs said charge readout part to periodically read out one line of the signal charges generated by said light receiving part and prohibits illumination from irradiating in said illuminating device while said signal charge is converted to a voltage by said charge-to-voltage converter and then output as image data of the original.

13. A data structure for coding and transmitting an image scanning program which causes a computer to execute the step of controlling an image scanning apparatus comprising:

15 an illuminating device for irradiating illumination on an original;

an imaging device for reading out said signal charges from a light receiving part and outputting said signal charges as image data of the original, including said light receiving part for receiving light and for generating said signal charges, in which the light is an illumination irradiated from said illuminating device and influenced by the original; and

20 a controlling device for directing said illuminating device to irradiate illumination, directing said imaging device to read out the signal charge generated by said light receiving part, and prohibiting illumination from irradiating in said illuminating device while image data of the original is output from said imaging device.

14. The data structure according to claim 13, wherein:

25 said imaging device

has a line sensor comprising a plurality of light receiving parts arranged in one dimension, a charge-to-voltage converter which converts signal charges to voltages and outputs the voltages, a charge readout part which reads out signal charges generated by said light receiving parts, and a charge transfer part which transfers signal charges read out by said charge readout part to said charge-to-voltage converter, and

outputs image data of the original for every line while moving at least one of said line sensor and original in a direction orthogonal to the direction said light receiving parts are arranged in; and

10 said controlling device directs said charge readout part to periodically read out one line of the signal charges generated by said light receiving part and prohibits illumination from irradiating in said illuminating device while said signal charge is converted to a voltage by said charge-to-voltage converter and then output as image data of the original.